REMARKS

In the Office Action, the Examiner indicated that Claims 1 through 27 are pending in the application and the Examiner rejected all claims.

Claim Rejections, 35 U.S.C. § 101

Claim 22 is rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. Applicants respectfully traverse this rejection. The Examiner asserts that claim 22 is directed to software per se. In support of this assertion, the Examiner cites a sentence from the specification, but cites no language from claim 22. In fact, nowhere does claim 22 recite computer instructions or any other form of limitation related to software. For this reason, Applicants respectfully request that the §101 rejection be withdrawn.

Claim Rejections, 35 U.S.C. §§ 102 and 103

Claims 1, 2, 4-22 and 27 are rejected under 35 U.S.C. 102 (e) as being anticipated by Chan et al., U.S. Patent No. 6,192,054 (Chen). Claims 3 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. further in view of Corrigan et al., U.S. Patent Publication No. 2004/0148357 (Corrigan).

The Present Invention

The present invention teaches a network architecture and related methods for maintaining traffic flow between clients and an end-server during a Denial of Service (DoS) attack. The network

architecture includes a set of overlay nodes coupled between clients and a server. Each overlay node stores the rankings of other overlay nodes and probes the other nodes for purposes of selecting a best path for routing traffic to the end-server to resist a denial of service [of] attack. Probing is performed to detect overlay nodes having better performance based on one or more performance metrics (i.e., load, jitter, latency, loss rate). Claim 1 recites:

> An overlay network for maintaining traffic flow between a client and a server during a denial of service attack, comprising:
> a set of overlay nodes, coupled between the client and the server, wherein each overlay node comprises:
> a ranking module configured to rank the overlay nodes based on a performance metric, wherein an overlay node with a higher-ranking indicates that the overlay node has better performance for transferring traffic to the server than overlay nodes with lower-rankings; and
> a probing module configured to probe a portion of the overlay nodes with higher-rankings more frequently than overlay nodes with lower-rankings during probing intervals.

Independent claims 10, 19, 22, 23 and 27 recite similar language.

Chan et al., U.S. Patent No. 6,192,054

Chan et al., U.S. Patent No. 6,192,054 (Chan) teaches an apparatus for accelerated Fiber Channel protocol handshaking and data exchange involves dividing a Fiber Channel arbitrated loop architecture up into a plurality of arbitrated subloops. Each subloop is coupled to a hub port which contains a state machine which implements distributed intelligence to do switching function and fill word generation to implement the accelerated protocol by using a plurality of switching, fill word generation and token passing rules. Chan has nothing to do with a client-server relationship or the

prevention of denial of service attacks. Further, Chan does not disclose any ranking of nodes based on any type of performance metrics or any probing by one node of another node.

The Cited Prior Art Does Not Anticipate the Claimed Invention

The MPEP and case law provide the following definition of anticipation for the purposes of 35 U.S.C. § 102:

> A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.@ MPEP '2131 citing *Verdegaal Bros. v. Union Oil Company of California*, 814 F.2d 628, 631, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987)

The Examiner Has Not Established a *Prima facie* Case of Anticipation

As noted above, each independent claim of the present application recites an overlay network for maintaining traffic flow between a client and a server during a denial of service attack, a set of overlay nodes coupled between the client and the server. Further, each overlay node includes a ranking module configured to rank the overlay nodes based on a performance metric, wherein an overlay node with a higher-ranking indicates that the overlay node has better performance for transferring traffic to the server than overlay nodes with lower-rankings; and a probing module configured to probe a portion of the overlay nodes with higher-rankings more frequently than overlay nodes with lower-rankings during probing interval. None of these limitations are disclosed in Chan.

The Examiner states that Chan teaches an overlay network for maintaining traffic flow between a client and a server during a denial of service attack, comprising: a set of overlay nodes, coupled between the client and the server. However the Examiner offers no citation or support

whatsoever for that statement. In fact, Chan discloses none of those limitations. The invention of Chan and has nothing to do with networking or preventing attacks on a network. Nowhere does Chan disclose any type of client-server relationship between anything. And, nowhere does Chan make any mention of any type of networking attack such as a DoS attack.

The Examiner additionally states that Chan discloses that each node includes a ranking module configured to rank the overlay nodes based on a performance metric, wherein an overlay node with a higher-ranking indicates that the overlay node has better performance for transferring traffic to the server than overlay nodes with lower-rankings (col. 1, line 57 - col. 2, line 14, Chan discloses ranking of nodes on a network based on performance). However, Chan does not disclose that nodes include rankings for other nodes and does not disclose any type of performance metric. Rather, the cited passage actually discloses that each node in Chan includes a priority ranking only for itself. Further, the priority ranking is based only on whether the node has requested control of the loop. The priority ranking has nothing to do with any type of performance metric. As discussed on column 2, lines 7-15 of Chan, each node determines whether it should have control of the loop by determining if its own priority ranking is higher than the priority ranking it receives in a message from the node currently in control of the loop. Unlike the claims of the present invention, the nodes of Chan do not include any ranking of any other nodes and the priority ranking of Chan is not based on any type of performance metric.

The Examiner further states that each node includes a probing module configured to probe a portion of the overlay nodes with higher rankings more frequently than overlay nodes with lower-rankings during probing intervals (col. 4, lines 10-29, col. 13, lines 6-32, Chan discloses a

highest ranking node that is probed most frequently). However, nowhere do the cited passages mention any type of probing of other nodes, let alone a frequency with which probing is done. As discussed above, the nodes of Chan do not include any type of ranking of other nodes. Nowhere does Chan disclose that any node probes any other node for any information whatsoever. The priority comparison made by each node in Chan in order to determination control of the loop does not involve any node probing any information about any other node or storing any information about any other node. Thus, nowhere does Chan disclose that each node includes a probing module configured to probe a portion of the overlay nodes with higher rankings more frequently than overlay nodes with lower-rankings during probing intervals, as recited in the claims of the present application.

For these reasons, Chan does not disclose or suggest any of the claims of the present application. The other cited references do not make up for the deficiencies of Chan. Accordingly, each of the independent claims, and all claims depending therefrom, patentably define over Chan, alone or in combination with the other cited prior art, and are in condition for allowance.

Conclusion

The present invention is not taught or suggested by the prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims. An early Notice of Allowance is earnestly solicited.

Respectfully submitted,

July 1, 2008
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